2.01 GENERAL

A. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer’s system.

B. All systems and components shall have been thoroughly tested and proven in actual use.

C. All systems and components shall be provided with the availability of a toll-free (U.S. and Canada), 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.

D. All systems and components shall be provided with a one-day turnaround repair express and 24-hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and nonwarranty items.

2.02 GENERAL SPECIFICATIONS

OUTDOOR CCTV CAMERA PAN AND TILT POSITIONING SYSTEM

A. The outdoor CCTV camera pan and tilt drive system shall consist of an integral, environmental, variable speed/high speed pan and tilt drive unit with continuous 360° rotation; integrated optics package, consisting of a lens and camera unit; and mount.

B. The outdoor CCTV camera pan and tilt drive system shall meet or exceed the following specifications defined by pan and tilt drive unit, camera, lens, and operations:

2.03 PAN AND TILT DRIVE UNIT SPECIFICATIONS

A. General Construction: Die-cast, extruded, and sheet aluminum; stainless steel hardware

B. Finish: Gray polyester powder coating

C. Viewing Window: 0.23-inch (5.84 mm) thick optically clear tempered glass

D. Drive Unit: Cogged belt drive with .9° stepper motor operation in microstep mode

E. Motors: Sealed bearings attached without gear head attached

F. Limit Stops: Nonmechanical; programmable for manual panning, auto/random scanning, and frame scanning

G. Wiring: Internally prewired with no exposed wiring from the mount to the camera enclosure

H. Programming: Built-in, user-friendly menu system for on-screen setup; programming stored on non-volatile memory chip
I. Azimuth Zero: Programmable to 0° point to correspond to true or magnetic north compass readings

J. Azimuth/Elevation: Programmable on-screen readout of azimuth from 0° to 359° and elevation -83° to +33°

K. Direction Display: Programmable on-screen readout of compass directions (N, NE, NW, E, SE, S, SW, and W)

L. Mode of Operation: Selectable at power-up

M. Zones: Eight, programmable in size with 20-character label for each and with the ability to blank the video in the zone

N. Auxiliary Output: One, which shall be an open collector at 32 VDC maximum at an output of 40 mA and which shall deactivate automatically after two seconds of activation

O. Pattern: One for a maximum of six minutes or two for a maximum of three minutes each

P. Receiver: Integral with automatic sensing for selection of protocol

Q. Protocol: Coaxitron®; P and D, RS-485/422

R. Addressing: Selectable DIP Switches

S. Speed: Variable and proportional to depth of zoom

T. Pan Rotation: 360° continuous rotation

U. Pan Speed (Winds 50 MPH): Manual control variable from 0.1° to a maximum of 40° per second

   Turbo mode up to a maximum 100° per second

   Preset mode up to a maximum 100° per second

(Winds 90 MPH): Manual control variable from 0.1° to a maximum of 40° per second

   Turbo mode up to a maximum 50° per second

   Preset mode up to a maximum 50° per second

V. Vertical Tilt: +33° to -83° unobstructed

W. Tilt Speed (Winds 50 MPH): Manual control variable from 0.1° to a maximum of 20° per second

   Turbo mode up to a maximum 30° per second

   Preset mode up to a maximum 30° per second

(Winds 90 MPH): Manual control variable from 0.1° to a maximum of 20° per second

   Turbo mode up to a maximum 30° per second

   Preset mode up to a maximum 30° per second

X. Presets: 64, with 20-character label for each preset position

Y. Preset Accuracy: +/- .25°

Z. Park: Programmable to go to a preset location after a user-programmed time

AA. Safety Features: Built-in safety to keep from being overdriven and move in wind speeds up to 130 mph while power is applied; damage-free motor assemblies if unit is back-driven while under power or no power applied

AB. Remote Data Port Compatible: Ability to control and set up unit through optional remote data port that is located in area with easy access; compatible with personal computers and PDAs such as Palm and iPaq
AC. RS422 Position Feedback: ASCII output of azimuth, elevation, and zoom factor
AD. RS422 Direct Positioning: ASCII command capability for exact positioning based upon azimuth, elevation, and zoom factor
AE. Third-Party Control Systems: Ability to plug in optional board that converts control signals from selected third-party controllers

2.04 HIGH RESOLUTION COLOR CCD CAMERA
Color/Black-White LowLight™ Optic System (23X)

A. Image Sensor: 1/4-inch CCD
B. Scanning System: 2:1 interlaced output
C. Effective Pixels: 724 x 494
D. Horizontal Resolution: >470 TVL
E. Lens: F1.6 (f=3.6-82.8 mm optical, 23X optical zoom, 10X electronic zoom)
F. Zoom Speed: 4.2 seconds
G. Zoom Readout: Programmable on-screen readout of zoom factor (0-230X)
H. Horizontal Angle of View: 54° at 3.6 mm wide zoom, 2.5° at 82.8 mm telephoto zoom
I. Focus: Automatic with manual override
J. Sensitivity at 35 IRE: Color at 1/2 second shutter speed, 0.08 lux
B-W at 1/2 second shutter speed, 0.013 lux
B-W at 1/60 second shutter speed, 0.3 lux
K. Synchronization System: Internal/AC line lock that is phase adjustable via remote control, V-sync
L. Shutter Speed: 1/2 to 1/30,000 of a second
M. Iris Control: Automatic with manual override
N. Gain Control: Automatic/off
O. Video Output: 1 volt peak-to-peak, 75 ohms
P. Video Signal to Noise: >50 dB

Color LowLight Optic System (22X)

A. Image Sensor: 1/4-inch Ex-View HAD CCD
B. Scanning System: 2:1 interlaced output
C. Effective Pixels: 768 x 494
D. Horizontal Resolution: >470 TVL
E. Lens: F1.6 (f=4.0-88.0 mm optical, 22X optical zoom, 10X electronic zoom)
F. Zoom Speed: 3.9 seconds
G. Zoom Readout: Programmable on-screen readout of zoom factor (0-220X)
H. Horizontal Angle of View: 47° at 4.0 mm wide zoom, 2.2° at 88.0 mm telephoto zoom
I. Focus: Automatic with manual override
J. Sensitivity at 35 IRE: 0.02 lux with 1/2 second shutter speed
K. Synchronization System: Internal/AC line lock that is phase adjustable via remote control, V-sync
L. White Balance: Automatic with manual override
M. Shutter Speed: 1/2 to 1/30,000 of a second
N. Iris Control: Automatic with manual override
O. Gain Control: Automatic/off
P. Video Output: 1 volt peak-to-peak, 75 ohms
Q. Video Signal to Noise: >50 dB

Color LowLight Optic System (16X)

A. Image Sensor: 1/4-inch CCD
B. Scanning System: 2:1 interlaced output
C. Effective Pixels: 768 x 494
D. Horizontal Resolution: >470 TVL
E. Lens: F1.4 (f=4.0-64.0 mm optical, 16X optical zoom, 10X electronic zoom)
F. Zoom Speed: 3.9 seconds
G. Zoom Readout: Programmable on-screen readout of zoom factor (0-160X)
H. Horizontal Angle of View: 43° at 4.0 mm wide zoom
3° at 64.0mm telephoto zoom
I. Focus: Automatic with manual override
J. Sensitivity at 35 IRE: 0.05 lux with 1/2 second shutter speed
K. Synchronization System: Internal/AC line lock that is phase adjustable via remote control, V-sync
L. White Balance: Automatic with manual override
M. Shutter Speed: 1/2 to 1/30,000 of a second
N. Iris Control: Automatic with manual override
O. Gain Control: Automatic with manual override
P. Video Output: 1 volt peak-to-peak, 75 ohms
Q. Video Signal to Noise: >46 dB

2.05 INTEGRAL ENCLOSURE ASSEMBLY

A. Integral Enclosure Assembly: Part of pan tilt unit assembled at factory
B. Access: Forward-opening lid with spring assist
C. Latch: Stainless steel clamp capable of being padlocked
D. Temperature Protection: Standard with factory-installed defroster/defoggers, thermostatically controlled heaters, thermal insulation, and sun shroud
E. Camera and Lens Assembly: Installed in the enclosure at the factory
F. Camera and lens Connectors: Plug-in type for easy removal

2.06 POWER TRANSFORMER MODULE ASSEMBLY

A. Power Transfer Module: Integral part of the mounting of the pan and tilt unit
B. Voltage Input: Selectable 120VAC or 230VAC
C. Power/Control Connection: Single 12-position pigtail including power, video, auxiliary function output, and control wiring
D. Power Consumption: Maximum 70 VA
E. Operating Temperatures: -50°C to 122°C
2.07 MANUFACTURER’S WARRANTY

A. Repair or Replacement: Defective parts for a period of two years from the date of shipment, including continuous motion modes.

2.08 CERTIFICATIONS

UL and cUL Listed
FCC Class B
CE Class B
NEMA 4X and IP66 Standards

2.09 DIMENSIONS

13.3 (L) x 17.5 (H) x 7.7 (W) positioned horizontally (not including the mount)

2.10 WEIGHT

23 lbs, including mount
### 2.11 MODELS

#### 23X Color/Black-White IOP

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestal mount, 24 VAC</td>
<td>ES30CBW18-2N</td>
</tr>
<tr>
<td>Pedestal mount, 120-130 VAC</td>
<td>ES30CBW18-5N</td>
</tr>
<tr>
<td>Pedestal mount, with wiper, 24 VAC</td>
<td>ES31CBW18-2N</td>
</tr>
<tr>
<td>Pedestal mount, with wiper, 120-130 VAC</td>
<td>ES31CBW18-5N</td>
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<tr>
<td>Wall mount, 24 VAC</td>
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<td>Wall mount, 120-130 VAC</td>
<td>ES30CBW18-5W</td>
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<td>Wall mount, with wiper, 24 VAC</td>
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<tr>
<td>Wall mount, with wiper, 120-130 VAC</td>
<td>ES31CBW18-5W</td>
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#### 22X Color ExView IOP:

<table>
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<th>Type</th>
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<tbody>
<tr>
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<tr>
<td>Pedestal mount, 120-130 VAC</td>
<td>ES30C22-5N</td>
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<tr>
<td>Pedestal mount, with wiper, 24 VAC</td>
<td>ES31C22-2N</td>
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<tr>
<td>Pedestal mount, with wiper, 120-130 VAC</td>
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<td>Wall mount, 24 VAC</td>
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<td>Wall mount, with wiper, 24 VAC</td>
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<tr>
<td>Wall mount, with wiper, 120-130 VAC</td>
<td>ES31C22-5W</td>
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#### 16X Color IOP:

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<tr>
<td>Pedestal mount, 24 VAC</td>
<td>ES30C16-2N</td>
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<tr>
<td>Pedestal mount, 120-130 VAC</td>
<td>ES30C16-5N</td>
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<td>Pedestal mount, with wiper, 24 VAC</td>
<td>ES31C16-2N</td>
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<tr>
<td>Wall mount, with wiper, 120-130 VAC</td>
<td>ES31C16-5W</td>
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or approved equal